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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,062	04/14/2004	Rajeev Puttaiah	OBC-136	6081
24963 7590 04/06/2007 ENERGY CONVERSION DEVICES, INC. 2956 WATERVIEW DRIVE ROCHESTER HILLS, MI 48309			EXAMINER LEWIS, BEN	
			ART UNIT 1745	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/06/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/824,062

Applicant(s)

PUTTAIAH ET AL.

Examiner

Ben Lewis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/8/07.
2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 16-18 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 18 is/are rejected.
7) ☒ Claim(s) 1-14 and 16-17 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 14 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

Detailed Action

1. The Applicant's amendment filed on January 8th, 2007 was received. Claims 1, 16 and 18 were amended. Claim 15 was cancelled.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action (issued on July 17th, 2006).

Claim Objections

3. Claims 1, 2 and 18 are objected to because of the following informalities: Claims 1, 2 and 18 are presented in improper Markush language. The recitation of "or" should be "and". Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by Sagal et al. (U.S. Pub. No. 2003/0038140A1).

With respect to claim 18, Sagal et al. disclose a food and beverage container made from a thermally conductive polymer composition (title) wherein FIG. 1 shows a

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front perspective view of the self-heating can 10 of the present invention having an outer container 14 with a spout 15 for access to the edible material within the can 10. A heating core, generally referred to as 17, resides within the outer container 14 to heat the edible material as described in detail below (Paragraph 0016). A thermally conductive polymer composition is used to make the star-shaped container 12. The polymer composition contains a base polymer matrix and thermally conductive filler material. Thermoplastic polymers such as polyethylene, acrylics, vinyls, and fluorocarbons can be used as the matrix. Alternatively, thermosetting polymers such as elastomers, epoxies, polyesters, polyimides, and acrylonitriles can be used as the matrix. Suitable elastomers include, for example, polysiloxanes (silicones) and Polyurethanes. Preferably, the polymer matrix constitutes about 30 to 60% by volume of the polymer composition (Paragraph 0017). Thermally conductive filler materials are added to the polymer matrix. Suitable filler materials include, for example, aluminum, alumina, copper, magnesium, brass, carbon, silicon nitride, aluminum nitride, boron nitride, zinc oxide, and the like. Mixtures of such fillers are also suitable. The filler material preferably constitutes about 20 to about 70% by volume of the composition. More preferably, the filler material constitutes less than 60% of each composition (Paragraph 0018).

With respect to the thermal conductivity of the matrix material and said being at least one order of magnitude higher than the thermal conductivity of the matrix material and said mixture has a thermal conductivity at least twice that of said matrix material.

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The instant specification recites: The polymer matrix material may be at least one polymer selected from the group consisting of polycarbonate, polyethylene, polypropylene, acrylics, vinyls, fluorocarbons, polyamides, polyolefin, polyesters, polyphenylene sulfide, polyphenylene ether, polyphenylene oxide, polystyrene, acrylonitrile-butadiene-styrene, liquid crystal polymers and combinations, mixtures, alloys or copolymers thereof. Particularly preferred are a polyphenylene ether/polystyrene blend and a polypropylene/polyphenylene ether blend. The thermally conductive, electrically insulating material may be distributed within the matrix material in a continuous (i.e. two or three dimensional meshes or mattes), discontinuous (i.e. particulate or fibrous material) or mixed mode manner. Examples of suitable thermally conductive, electrically insulating material include calcium oxide, titanium oxide, silicon oxide, zinc oxide, silicon nitride, aluminum nitride, and boron nitride and mixtures thereof. Particularly preferred is particulate boron nitride (Paragraphs 0011 and 0012) Sagal et al do not disclose any data which shows thermal conductivity of the conductive material being at least one order of magnitude higher than the thermal conductivity of the matrix material and said mixture has a thermal conductivity at least twice that of said matrix material. However, it is the position of the examiner that such properties are inherent, given that Kurasawa et al and the present application matrix material being a styrene-based resin "polystyrene" and the same thermally conductive, electrically insulating material "boron nitride" distributed throughout the matrix material (Paragraph 0018). The thermal conductivity of polyethylene 0.42-.51 (W/mK) as evidenced by (http://www.engineeringtoolbox.com/thermal-conductivity-d_429.html) and the thermal

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conductivity of boron nitride is 30 (W/mK) as evidenced by (<http://www accuratus.com/boron.html>). Therefore with the mixing ratios of 70% thermal conductive material and 30% matrix material, the thermal conductivity of the thermally conductive material of Sagal et al. would be at least one order of magnitude higher than the thermal conductivity of the matrix material because the thermal conductivity of polystyrene is 60X less than that of boron nitride. Furthermore, the thermal conductivity of the matrix material and the mixture of Sagal et al. would have a thermal conductivity at least twice that of the matrix material because because the thermal conductivity of polystyrene is 60X less than that of boron nitride.

A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature is necessarily present in that which is described in the reference. In re Robertson, 49 USPQ2d 1949 (1999).

The preamble of the claim is drawn to a battery case. The container of Segal is capable of being used as a battery case.

Allowable Subject Matter

6. Claims 3-14 and 16-17 are objected to as being dependent upon an objected base claim, but would be allowable if appropriate action is taken to corrected the

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objected base claim. Claims 1 and 2 are objected to for reasons above but contain allowable subject matter.

The following is a statement of reasons for the indication of allowable subject matter: The closest prior art of record, Kurasawa et al. does not disclose, teach or suggest the distinguishing feature added to claim 1 in the amendment filed 1/18/2007,

Response to Arguments

7. Applicant's arguments filed on September 28th, 2006 have been fully considered but they are not persuasive.

In response to Applicant's arguments, please consider the following comments.

Applicants arguments are considered moot in view of the new grounds of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben Lewis whose telephone number is 571-272-6481. The examiner can normally be reached on 8:30am - 5:30pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ben Lewis

Patent Examiner
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SUSYTSANG-FOSTER
PRIMARY EXAMINER